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Nos. 07-588, 07-589 and 07-597

In the Supreme Court of the United States

ENTERGY CORPORATION, PETITIONER

v.

ENVIRONMENTAL PROTECTION AGENCY, ET AL.

PSEG FOSSIL LLC, ET AL., PETITIONERS

v.

RIVERKEEPER, INC., ET AL.

UTILITY WATER ACT GROUP, PETITIONER

v.

RIVERKEEPER, INC., ET AL.

ON WRIT OF CERTIORARI
TO THE UNITED STATES COURT OF APPEALS
FOR THE SECOND CIRCUIT

BRIEF FOR THE FEDERAL PARTIES AS RESPONDENTS SUPPORTING PETITIONERS

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QUESTION PRESENTED

Whether Section 316(b) of the Clean Water Act, 33 U.S.C. 1326(b), authorizes the Environmental Protection Agency to compare costs with benefits in determining the "best technology available for minimizing adverse environmental impact" at cooling water intake structures.

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OPINION BELOW

The opinion of the court of appeals (Pet. App. 1a-94a) is reported at 475 F.3d 83.[1]

[1] Citations to the Pet. App. refer to the appendix filed in No. 07-588.

JURISDICTION

The judgment of the court of appeals was entered on January 25, 2007. A petition for rehearing was denied on July 5, 2007 (Pet. App. 95a-96a). On September 25, 2007, Justice Ginsburg extended the time within which to file the petitions for a writ of certiorari to and including November 2, 2007, and the petitions were filed on that date. The jurisdiction of this Court rests on 28 U.S.C. 1254(1).

STATUTORY AND REGULATORY PROVISIONS INVOLVED

The pertinent statutory and regulatory provisions are set forth in an appendix to this brief. App., *infra*, 1a-24a.

STATEMENT

1. Steam electric power plants and other industrial and manufacturing facilities depend upon intake structures to withdraw water from the Nation's lakes, rivers, and other water bodies. The withdrawn water then absorbs heat from the steam used to generate electricity. Among the adverse environmental impacts associated with the use of intake structures are "impingement," which occurs when aquatic organisms are trapped against the structures by the force of inflowing water, and "entrainment," which occurs when smaller organisms are pulled into a facility's cooling system. Billions of aquatic organisms are impinged or entrained by intake structures annually. See Pet. App. 3a.

Section 316(b) of the Clean Water Act (CWA or Act), 33 U.S.C. 1251 *et seq.*, requires that "the location, design, construction, and capacity of cooling water intake structures reflect the best technology available for mini-

mizing adverse environmental impact." 33 U.S.C. 1326(b). That provision is unique among CWA provisions because it addresses the *intake* of water, in contrast to other provisions that regulate the *discharge* of pollutants into waters of the United States.

The CWA does not define the substantive standard specified in Section 316(b)—"best technology available for minimizing adverse environmental impact" (BTA). 33 U.S.C. 1326(b). Section 316(b) does, however, cross-reference Sections 301 and 306 of the CWA by specifying that standards established pursuant to those sections must require that intake structures reflect BTA, *ibid.*, and Sections 301 and 306, in turn, call for consideration of costs.

Section 301 requires the Environmental Protection Agency (EPA) to establish standards known as "effluent limitations" for *existing* point source discharges in two phases. In the first phase, applicable to all pollutants, EPA must establish effluent limitations based on the "best practicable control technology currently available" (BPT). 33 U.S.C. 1311(b)(1)(A). In establishing BPT, EPA must consider a number of specified factors, including "the total cost of application of technology in relation to the effluent reduction benefits to be achieved from such application," as well as "such other factors as the Administrator deems appropriate." 33 U.S.C. 1314(b)(1)(B).

In the second phase, EPA must establish effluent limitations for conventional pollutants based on the "best conventional pollution control technology" (BCT), and for toxic pollutants based on the "best available technology economically achievable" (BAT). 33 U.S.C. 1311(b)(2)(A), (E). In determining BCT, EPA must consider, *inter alia*, "the relationship between the costs of

attaining a reduction in effluents and the effluent reduction benefits derived" and "such other factors as the Administrator deems appropriate." 33 U.S.C. 1314(b)(4)(B). In determining BAT, EPA must consider, *inter alia*, "the cost of achieving such effluent reduction" and "such other factors as the Administrator deems appropriate." 33 U.S.C. 1314(b)(2)(B).

Section 306 directs EPA to establish performance standards for *new* sources based on the "best available demonstrated control technology" (BADT). 33 U.S.C. 1316(a)(1). In establishing BADT, EPA "shall take into consideration the cost of achieving such effluent reduction, and any non-water quality, environmental impact and energy requirements." 33 U.S.C. 1316(b)(1)(B).

The limitations and standards promulgated under Sections 301, 306, and 316(b) are implemented through National Pollutant Discharge Elimination System (NPDES) permits. Such permits are issued for terms of up to five years, either by States with approved NPDES programs or by EPA in States without such programs. See 33 U.S.C. 1342; 40 C.F.R. 125.90(a).

2. a. EPA first promulgated regulations implementing Section 316(b) in 1976. J.A. 38-49 (41 Fed. Reg. 17,387). In the preamble to those regulations, EPA stated that, while Section 316(b) does not "require" the agency to conduct a cost-benefit assessment, the agency would consider a technology's "economic practicality" for individual facilities on a case-by-case basis. J.A. 42.

The Fourth Circuit remanded those regulations to EPA for procedural reasons. *Appalachian Power Co.* v. *Train*, 566 F.2d 451 (1977). When EPA subsequently withdrew the remanded regulations, it directed permitting authorities to use their best professional judgment to determine BTA for each facility on a case-by-case

basis. See 40 C.F.R. 401.14. In 1977, EPA distributed a draft guidance document that proposed a process for determining BTA on a facility-specific basis. See Pet. App. 160a-161a.

In 1977, EPA also issued a permitting decision and a General Counsel opinion explaining that it would not be "reasonable to interpret Section 316(b) as requiring use of technology whose cost is wholly disproportionate to the environmental benefit to be gained." *In re Pub. Serv. Co. of N.H. (Seabrook Station, Units 1 and 2)*, No. 76-7, 1977 WL 22370 (June 10, 1977), remanded on other grounds, 572 F.2d 872 (1st Cir. 1978); accord *In re Central Hudson Gas & Elec. Corp., Op. EPA Gen. Counsel*, NPDES No. 63, 1977 WL 28250, at *8 (July 29, 1977). Thus, the framework in existence for more than 30 years has provided for permitting authorities to consider the relationship between costs and benefits to at least that extent in determining each facility's BTA on a case-by-case basis.

b. In 1995, EPA entered into a consent decree establishing deadlines for proposing and taking final action on regulations implementing Section 316(b). That consent decree was later amended to provide for three "phases" of rulemaking addressing different categories of facilities. See Pet. App. 6a.

EPA published a Phase I rule in 2001. 66 Fed. Reg. 65,256. That rule governs *new* facilities that meet certain threshold specifications, and it provides that closed-cycle recirculating cooling systems (which reuse withdrawn water) reflect BTA for such facilities. *Id.* at 65,270-65,271. The Second Circuit largely upheld the Phase I rule. *Riverkeeper, Inc.* v. *United States EPA*, 358 F.3d 174, 181 (2004) (*Riverkeeper I*). The Phase II rule, which is at issue here, establishes requirements for

intake structures at *existing* large power plants that meet certain criteria. Pet. App. 122a-593a (69 Fed. Reg. 41,576 (2004)). The Phase III Rule establishes requirements for new offshore and coastal oil and gas facilities, existing manufacturing and industrial facilities, and smaller power plants. 71 Fed. Reg. 35,006 (2006). That rule is under review in the Fifth Circuit, which stayed its proceedings pending this Court's disposition of this case. *ConocoPhillips Co.* v. *EPA*, No. 06-60662 (filed July 14, 2006).

c. In the Phase II rule at issue here, EPA selected a combination of technologies to reflect BTA for existing large power plants. Pet. App. 224a-225a. Those technologies include, among others, relocation of intakes, fine mesh passive screens, double-entry single-exit traveling screens, velocity caps, larger intakes to decrease intake velocity, and barrier nets. See *id.* at 228a. EPA selected those technologies based on the various options' "overall efficacy, availability, economic practicability, including economic impact and the relationship of costs with benefits, and non-water quality environmental impacts, including energy impacts." *Id.* at 253a.

Based on the chosen technologies, EPA established national performance standards for reducing impingement mortality (by 80%-95%) and entrainment (by 60%-90%). 40 C.F.R. 125.94(b). EPA did not, however, require the use of any specific technology, because it wanted to "provide[] a high degree of flexibility for existing facilities to select the most effective and efficient approach and technologies for minimizing adverse environmental impact associated with their cooling water intake structures." Pet. App. 226a.

EPA considered treating closed-cycle recirculating cooling systems, which it had determined to be BTA for

(new) Phase I facilities, as BTA for (existing) Phase II facilities. See Pet. App. 254a-261a. EPA rejected that alternative, however, because of its "generally high costs (due to conversions), the fact that other technologies approach the performance of this option, concerns for energy impacts due to retrofitting existing facilities, and other considerations." *Id.* at 255a. EPA explained that: the cost of closed-cycle recirculating cooling towers for existing Phase II facilities was many times higher than for new Phase I facilities because of the need to retrofit facilities that had not been designed to use closed-cycle towers; such cooling towers were less energy efficient than EPA's chosen alternatives; and, "[a]lthough not identical, the ranges of impingement and entrainment reduction are similar" under EPA's chosen option and the closed-cycle alternative. *Id.* at 255a-261a; see *id.* at 368a-369a.

The rule also allows a facility to request a variance resulting in a site-specific BTA determination if the facility demonstrates that its cost of complying with the national performance standards is significantly greater than the environmental benefits. 40 C.F.R. 125.94(a)(5). EPA provided that flexibility because its "comparison of national costs to national benefits" underlying the nationwide performance standards "may not be applicable to a specific site due to variations in (1) the performance of intake technologies and (2) characteristics of the waterbody in which the intake(s) are sited." Pet. App. 250a.

3. After several parties petitioned for review, the petitions were consolidated in the Second Circuit. See Pet. App. 1a-94a. The court of appeals recognized that "Section 316(b) does not itself set forth * * * the specific factors that the EPA must consider in determining

BTA." *Id.* at 20a. Because Section 316(b) cross-references Sections 301 and 306, however, the court looked to the factors that EPA must consider in implementing various standards under those sections. *Id.* at 20a-23a. While those standards treat costs in different ways, and two of them specifically require a comparison of costs and benefits, the court concluded that Congress had manifested a clear intent in those other provisions "to move cost considerations under the CWA from a cost-benefit analysis to a cost-effectiveness one." *Id.* at 22a. The court further asserted that, if Congress had intended to permit a comparison of costs and benefits under Section 316(b), it would have said so expressly in the statute. *Id.* at 25a.

The court of appeals then held that EPA may not engage in cost-benefit analysis, but instead "may permissibly consider cost in two ways: (1) to determine what technology can be 'reasonably borne' by the industry and (2) to engage in cost-effectiveness analysis." Pet. App. 26a. After consulting the definition of "cost-effectiveness" found in an Office of Management and Budget (OMB) circular that does not purport to implement the CWA, the court explained that, in its view, permissible cost-effectiveness review is limited to choosing "a less expensive technology that achieves essentially the same results" as the best technology that industry can reasonably bear. *Id.* at 23a n.10, 26a-28a. "For example, assuming the EPA has determined that power plants governed by the Phase II Rule can reasonably bear the price of technology that saves between 100-105 fish, the EPA, given a choice between a technology that costs $100 to save 99-101 fish and one that costs $150 to save 100-103 fish * * *, could appropriately choose the cheaper technology on cost-effectiveness grounds." *Id.*

at 26a-27a. Thus, the court concluded, "the specified level of benefit is * * * a narrowly bounded range, within which the EPA may permissibly choose between two (or more) technologies that produce essentially the same benefits but have markedly different costs." *Id.* at 28a.

The court of appeals then remanded to EPA because, in the court's view, "it is unclear whether the Agency improperly weighed the benefits and the costs of requiring closed-cycle cooling." Pet. App. 32a-33a. Based on its cost-benefit holding, the court also invalidated a provision of the Phase II rule that authorizes site-specific variances for facilities where costs of compliance with the nationwide performance standards would significantly exceed the environmental benefits. *Id.* at 56a-60a. On the same basis, the court rejected an industry petitioner's contention that the rule's costs impermissibly exceed its benefits. *Id.* at 27a n.13. While the court upheld EPA's authority to express BTA as a range, it also concluded that the agency must "require facilities to choose the technology that permits them to achieve as much reduction of adverse environmental impacts as is technologically possible," and the court directed EPA to reconsider its chosen ranges under that standard on remand. *Id.* at 43a-44a.

The court of appeals addressed a number of other challenges to the rule as well. For example, the court held that EPA had not provided sufficient public notice concerning a provision that authorizes the operator of a facility to apply for a site-specific BTA determination in circumstances where the facility's costs of complying with the nationwide performance standards would be significantly greater than the costs considered by EPA in establishing those standards. Pet. App. 51a-56a. The

court also upheld EPA's determinations that Section 316(b) applies to existing as well as new facilities, *id.* at 72a-77a, and that the loss of aquatic organisms is an adverse environmental impact within the meaning of Section 316(b), *id.* at 78a-80a.

SUMMARY OF ARGUMENT

The agency's gap-filling interpretation of Section 316(b) of the CWA is entitled to deference under *Chevron U.S.A. Inc.* v. *NRDC*, 467 U.S. 837 (1984). The CWA is full of requirements governing the *discharge* of pollutants, and in many instances Congress specified, in detail, the factors that EPA must consider in implementing those requirements. In Section 316(b), in contrast, Congress included a single terse sentence concerning the *intake* of water, and assigned broad authority to the agency to determine how best to address that distinct issue. The court of appeals erred by attempting to micro-manage the agency's exercise of its broad statutory discretion.

A. The CWA requires that "the location, design, construction, and capacity of cooling water intake structures reflect the *best* technology *available* for *minimizing* adverse environmental impact." 33 U.S.C. 1326(b) (emphases added). Nothing in that statutory standard speaks directly to the question whether, or to what extent, EPA should consider the relationship between costs and benefits. The "best" way for pursuing a goal is not always the one that most single-mindedly pursues that goal at all costs. Instead, the best way often depends on other considerations.

Moreover, whether a technology is "available" under Section 316(b) depends on its cost, as even the court of appeals acknowledged. And the term "minimizing" is

commonly used to refer to reductions that fall short of the greatest amount possible. Thus, the statutory standard does not unambiguously require EPA to set BTA without regard to the relationship between costs and benefits. Nor does it specify the extent to which EPA may consider that relationship. Instead, the Act leaves that determination to EPA—the agency with expertise in making such determinations.

B. Section 316(b) cross-references Sections 301 and 306 of the Act by specifying that standards established pursuant to those sections must require that intake structures reflect BTA. Those sections contain several "best" standards that govern the discharge of pollutants. Significantly, the Act expressly *requires* EPA to consider costs in promulgating all of those standards, and specifically requires EPA to consider the relationship between costs and benefits in promulgating two of them. Thus, while Section 316(b) sets forth a different standard than the "best" standards of Sections 301 and 306, and does not require EPA to follow those provisions as a model for determining BTA, the cross-reference to those provisions nonetheless suggests that EPA's consideration of the relationship between costs and benefits is at least reasonable.

Congress had good reason to confer greater discretion on the agency under Section 316(b) than under Sections 301 and 306. Section 316(b) is unique among the CWA's provisions in that it governs the *intake* of water, as opposed to the *discharge* of pollutants. Moreover, "Section 316(b) is something of an afterthought, having been added by the conference committee without substantive comment." *Riverkeeper I*, 358 F.3d at 186 n.12. Especially compared to the far more detailed provisions governing *discharge* limitations under Sections 301 and

306, Section 316(b)'s single sentence vests broad gap-filling authority in EPA to address the unique issue of *intake* restrictions.

C. The court of appeals' error is confirmed not only by the text, structure, and history of the statute, but also by the extent to which the court attempted to micromanage EPA's consideration of various factors. The court held that EPA could undertake what the court called "cost-effectiveness" but not "cost-benefit" analysis—terms that appear nowhere in Section 316(b). While the court ultimately acknowledged that the agency could consider the relationship between costs and benefits, it held that the agency could do so only within an unspecified but "narrowly bounded" range. Pet. App. 28a. And the court held that, while cost-benefit analysis is impermissible, consideration of energy efficiency is permissible. Nothing in Section 316(b)'s single, terse sentence unambiguously draws those distinctions; instead, the court effectively imposed its own preferences on the agency, in contravention of *Chevron*.

D. The court of appeals also turned normal rules of statutory construction and agency deference on their head by asserting that agencies *may* consider the relationship between costs and benefits only when Congress has *clearly* authorized them to do so. Under *Chevron*, if Congress has not directly spoken to the precise question at issue, the agency has leeway to adopt its own construction of the statute as long as it is reasonable. Thus, Congress's silence or ambiguity on an issue confers discretion, not limitation. In any event, the traditional interpretive principles discussed above make clear that, in this instance, Congress intended to confer especially *broad* discretionary authority on EPA.

E. The agency's measured consideration of costs and benefits in this rulemaking fell well within its discretion. Indeed, EPA's selection of a nationwide performance standard based on multiple relevant factors may be permissible even under the cramped standard created by the court of appeals. The agency found that the environmental respondents' preferred technology had similar benefits, but far higher costs, than the performance standards selected by EPA, and that other factors such as energy efficiency and air quality also weighed in favor of EPA's chosen performance standards. The agency further authorized a site-specific determination of BTA if a facility's costs of compliance with the nationwide performance standards would be significantly greater than the benefits. Especially considering that BTA was historically determined on a facility-specific, best-professional-judgment basis, and the site-specific provision looks only to whether costs *significantly* exceed benefits, that provision falls comfortably within EPA's discretion.

ARGUMENT

THE ENVIRONMENTAL PROTECTION AGENCY MAY CONSIDER COSTS IN RELATION TO BENEFITS IN DETERMINING THE BEST TECHNOLOGY AVAILABLE FOR MINIMIZING ADVERSE ENVIRONMENTAL IMPACT UNDER SECTION 316(b)

Consideration of the costs of a certain action in relation to its benefits is common in government regulation, as it is in human experience generally. In everyday life, people routinely weigh costs against benefits in deciding whether to do something. If a bigger car would be safer than a smaller and less expensive one, a person must decide whether the extra expense (of both the larger car

and the subsequent gasoline purchases) is justified by the safety and other benefits. Similarly, if a better home fire alarm would cost more than a traditional one, or if expensive new insulation would be more fire-resistant than the insulation already installed in a house, the homeowner must decide whether the added safety benefit justifies the added cost. See Hon. Stephen G. Breyer, *Breaking the Vicious Circle: Toward Effective Risk Regulation* 16 (1994) (*Vicious Circle*).

In numerous contexts, federal agencies engage in conceptually similar analyses by deciding whether a regulatory alternative's costs are justified by its benefits. To be sure, agencies do not always make cost-benefit analyses. And when they do such analyses, agencies consider costs and benefits in different ways, and give differing weight to costs and benefits. Sometimes costs and benefits are measured in monetary terms; other times they are compared qualitatively, as people do in everyday life. Sometimes an agency looks only at whether the benefits exceed the costs; other times (as here) the agency considers the cost-benefit relationship in conjunction with other factors. In the latter circumstance, after considering all relevant factors, an agency might decide to issue a regulation even though its costs are very high in proportion to its benefits. Or the agency might decide that the costs are too disproportionate to benefits to justify the proposal. But however an agency approaches the issue, consideration of costs and benefits is a common feature of agency decision-making, including in the environmental area.

The question presented here is not whether or to what extent cost-benefit analysis is a good thing. Instead, the question is whether Section 316(b) permits EPA to consider the relationship between costs and ben-

efits in determining the best technology available for minimizing the adverse environmental impact of cooling water intake structures. That question must be answered by applying the familiar two-step framework established by *Chevron*: first, "whether Congress has directly spoken to the precise question at issue"; and, if not, "whether the agency's answer is based on a permissible construction of the statute." 467 U.S. at 842-843. As explained below, Section 316(b) does not directly answer the question presented (or preclude EPA from considering the relationship between costs and benefits), and EPA's determination that it is appropriate to consider both costs and benefits in this context is an entirely permissible construction of the statute.

A. The Statutory Text Does Not Unambiguously Prohibit Consideration Of The Relationship Between Costs And Benefits

Section 316(b) requires that "the location, design, construction, and capacity of cooling water intake structures reflect the *best* technology *available* for *minimizing* adverse environmental impact." 33 U.S.C. 1326(b) (emphases added). That statutory standard does not directly speak to the question presented. Nor, to be clear, does it unambiguously preclude EPA from considering the relationship between costs and benefits—especially considering that Congress did not define any of the key statutory terms or otherwise specify the factors the agency may or must consider. See Pet. App. 20a ("Section 316(b) does not itself set forth * * * the specific factors that the EPA must consider in determining BTA.").

The first key statutory term is "best." Best is a relative term capable of different meanings, and the "best"

way of pursuing a goal is not always the one that most single-mindedly achieves that goal at all costs. For example, the best way to drive home might not be the quickest and most direct route on a map. That route might be more dangerous than others, more prone to traffic jams, or more expensive (*e.g.*, if it required payment of a toll). Similarly, the best way to win a game does not typically entail violating the rules, even if cheating would improve one's odds of winning, because other values matter as well. And the best way to catch fish is not necessarily the one that nets the most fish in the shortest period of time; to many, fly fishing has offsetting advantages.

Moreover, Section 316(b) refers to the "best technology available *for* minimizing adverse environmental impact," not the technology that is best *at* minimizing such impact. 33 U.S.C. 1326(b) (emphasis added). The word "for" is sometimes "[u]sed to indicate appropriateness or suitability." *American Heritage Dictionary* 686 (4th ed. 2006) (*American Heritage*); accord VI *Oxford English Dictionary* 26 (2d ed. 1989). Thus, while an individual may be regarded as the best person *at* his trade, he might not be the best person *for* a particular job, depending on a range of considerations. As the Sixth Circuit explained in construing another "best" standard in the CWA, the "requirement that EPA choose the 'best' technology does not mean that the chosen technology must be the best pollutant removal." *BP Exploration & Oil, Inc.* v. *United States EPA*, 66 F.3d 784, 796 (1995); accord *Citizens Coal Council* v. *United States EPA*, 447 F.3d 879, 903 (6th Cir. 2006) (en banc).

The statute also refers to the "best technology *available* for *minimizing* adverse environmental impact." 33 U.S.C. 1326(b) (emphases added). As the court of

appeals recognized, a technology's availability under Section 316(b) depends on its cost. Pet. App. 24a; see also *id.* at 349a-350a. The court erred, however, in holding that the statute unambiguously constrains EPA's consideration of costs to whether a technology's cost could be "reasonably borne by the industry." *Id.* at 24a. Even considering the term "available" in isolation, many people would not think of a luxury item as being "available" simply because its purchase would not bankrupt them. See *Random House Dictionary of the English Language* 142 (2d ed. 1987) (defining "available" to mean, among other things, "readily obtainable; accessible"); *American Heritage* 123 ("[p]resent and ready for use; at hand; accessible"). Indeed, assuming that the court of appeals did not intend to require a just-shy-of-bankruptcy standard, but instead intended the "reasonably borne" standard to be a more flexible one, that only underscores that Section 316(b)'s use of the term "available" does not unambiguously preclude consideration of whether an option's costs are warranted in light of other considerations.

The statutory term "minimizing" is also significant. To be sure, that term most formally refers to "reduc-[ing] to the smallest possible amount, extent, size, or degree." *American Heritage* 1119. But in common usage, the terms "minimal" and "minimize" often refer to a lesser degree of reduction. See, *e.g.*, *ibid.*; *Black's Law Dictionary* 1016 (8th ed. 2004) ("smallest *acceptable* or possible quantity") (emphasis added). For example, if a person said that he was trying to minimize the risk of being hit by a car while crossing a street, he presumably would not mean that he was staying inside his house at all times. Instead, the person would presumably mean that he was trying to reduce that risk consis-

tent with other practical considerations, including economic ones such as the need to travel to work, and thus, for example, was looking both ways before crossing a street. Accordingly, EPA determined that the appropriate "degree" of minimization may depend in part on "the relationship between costs and benefits." Pet. App. 355a; see 40 C.F.R. 125.83 ("Minimize means to reduce to the smallest amount, extent, or degree *reasonably* possible.") (emphasis added).

The upshot is that the "best technology available for minimizing adverse environmental impact," 33 U.S.C. 1326(b), is not unambiguously the one that achieves the greatest degree of environmental protection without regard to other considerations, including the relationship between costs and benefits. If it did, EPA might have to require a facility to devote billions of dollars to saving a relatively small number of organisms, even if those billions might be far better spent in other ways, including on more beneficial environmental objectives. Cf. *Vicious Circle* 18-19. Nothing in the statutory text compels that result.

B. The Statutory Structure, Context, And History Confirm That EPA May Consider The Relationship Between Costs And Benefits

Section 316(b) does not define its key terms or set forth the factors that EPA must or may consider in determining BTA. It does, however, cross-reference Sections 301 and 306 of the CWA by specifying that standards established pursuant to those sections, which govern the discharge of pollutants, must require that intake structures reflect BTA. 33 U.S.C. 1326(b). The only direct consequence of the cross-reference is a procedural one: when any standard under Section 301 or 306

is made applicable to a point source with an intake structure, such as in an NPDES permit, the standard must also reflect BTA limits. Cf. Pet. App. 5a. Nonetheless, the cross-reference to Sections 301 and 306 is informative, especially because those sections include numerous other "best" standards. See *id.* at 6a, 20a; *Riverkeeper I*, 358 F.3d at 186; Pet. App. 154a, 349a-350a.

As discussed below, Congress specified the factors that EPA must consider in promulgating each of the various "best" standards found in Sections 301 and 306. In doing so, it expressly *required* consideration of costs for all of those standards, and specifically *required* consideration of the relationship between costs and benefits for two of them. The express statutory mandate to consider costs under the cross-referenced sections strongly supports EPA's interpretation that consideration of the relationship between costs and benefits is *permissible* under Section 316(b). Moreover, Congress's decision to specify the factors that EPA must consider under the "best" standards for the discharge of pollutants under Sections 301 and 306, but not under the different "best" standard for the intake of water under Section 316(b), confirms that Congress intended to grant broad discretion to the agency to interpret and implement Section 316(b)'s terse and unique provision.

1. Section 316(b) cross-references provisions that require consideration of costs, including comparison of costs and benefits

The cross-referenced Section 301 directs EPA to promulgate "effluent limitations for point sources * * * which shall require the application of the best practicable control technology currently available" (BPT). 33 U.S.C. 1311(b)(1)(A). Congress specified that, in es-

tablishing BPT, EPA *must* consider, among other factors, "the total cost of application of technology in relation to the effluent reduction benefits to be achieved from such application." 33 U.S.C. 1314(b)(1)(B). Determination of BPT, therefore, requires "weighing benefits and costs." *EPA* v. *National Crushed Stone Ass'n*, 449 U.S. 64, 76 (1980).

While the BPT standards were to provide the first effluent limitations for all pollutants, Congress directed EPA to promulgate more stringent effluent limitations thereafter. *National Crushed Stone*, 449 U.S. at 69-70 & n.9. For conventional pollutants, Congress required EPA to promulgate effluent limitations based on the "best conventional pollution control technology" (BCT). 33 U.S.C. 1311(b)(2)(E); see 33 U.S.C. 1314(a)(4) (granting EPA authority to identify conventional pollutants); see also *National Crushed Stone*, 449 U.S. at 70 n.9. In determining BCT, EPA must consider, among other factors, "the relationship between the costs of attaining a reduction in effluents and the effluent reduction benefits derived." 33 U.S.C. 1314(b)(4)(B). Thus, Congress again expressly required consideration of the relationship between costs and benefits. See, *e.g.*, *American Paper Inst.* v. *United States EPA*, 660 F.2d 954, 961 (4th Cir. 1981).

For toxic and some other non-conventional pollutants, Congress required limitations that "require application of the best available technology economically achievable * * * which will result in reasonable further progress toward the national goal of eliminating the discharge of all pollutants" (BAT), unless EPA determines that the complete elimination of pollutant discharges is "technologically and economically achievable" for a category or class of point sources. 33 U.S.C.

1311(b)(2)(A), (C), (D), (F); see 33 U.S.C. 1362(13) (defining the term "toxic pollutant"); see also *National Crushed Stone*, 449 U.S. at 70-71. In the latter situation, EPA is to require the elimination of such discharges. 33 U.S.C. 1311(b)(2)(A). Congress specified that, in promulgating BAT standards, EPA "shall take into account" a number of factors, including "the cost of achieving such effluent reduction * * * and such other factors as the Administrator deems appropriate." 33 U.S.C. 1314(b)(2)(B). Congress further authorized EPA to promulgate standards less stringent than BAT, but at least as stringent as BPT, for certain non-conventional pollutants. See 33 U.S.C. 1311(g).

While the various Section 301 standards govern *existing* sources, Section 306 requires EPA to promulgate standards of performance for *new* sources. 33 U.S.C. 1316(b)(1)(B). Those standards must "reflect the greatest degree of effluent reduction which the Administrator determines to be achievable through application of the best available demonstrated control technology, processes, operating methods, or other alternatives, including, where practicable, a standard permitting no discharge of pollutants" (BADT). 33 U.S.C. 1316(a)(1). In establishing BADT, EPA "shall take into consideration the *cost* of achieving such effluent reduction, and any non-water quality, environmental impact and energy requirements." 33 U.S.C. 1316(b)(1)(B) (emphasis added).

The bottom line is that each of the cross-referenced provisions *requires* consideration of costs, and two of them (BPT and BCT) specifically require comparison of costs and benefits. Section 316(b)'s cross-reference to those provisions therefore reinforces the conclusion that it does not unambiguously *preclude* EPA from consider-

ing the relationship between costs and benefits. Pet. App. 345a-350a. Indeed, considering that standards established pursuant to Sections 301 and 306 must require that intake structures reflect BTA, and that all of the relevant standards and limitations are set forth in the same NPDES permit for a facility, see 33 U.S.C. 1326(b), it would make little sense for EPA to have less flexibility in determining BTA than in determining the other standards.

2. Congress conferred broad authority on EPA to determine how best to consider costs, benefits, and other relevant factors

a. Especially measured against the detailed provisions governing the factors that EPA must consider in promulgating effluent limitations under Sections 301 and 306, the single sentence set forth in Section 316(b) confers broad authority on the agency to determine both which factors to consider and how to consider them. Section 316(b) sets forth a different standard (BTA) than the other sections. And nothing in the Act evinces an intent to require EPA to treat BTA like—or differently than—any one of the Section 301 or 306 effluent limitations. Nor does Section 316(b) evince any intent to require EPA to consider only the factors listed in one or another of those sections, or to consider any given factor in precisely the same manner that it considers that factor in determining another of the "best" standards. Instead, as the Second Circuit itself observed in *Riverkeeper I*, the fact that Congress set forth lists of factors that EPA must consider in implementing the various "best" standards of Sections 301 and 306, but conspicuously did not do so in Section 316(b), confirms the

breadth of the discretion left to EPA. 358 F.3d at 187; see Pet. App. 156a-157a.

b. Congress had good reason to confer greater discretion on EPA under Section 316(b) than under Sections 301 and 306. Section 316(b) is unique among the CWA's provisions in that it governs the *intake* of water, as opposed to the *discharge* of pollutants. Because "intake structures are in a class by themselves," *Riverkeeper I*, 358 F.3d at 193, there is no reason to presume that the same standards that govern the discharge of pollutants should also govern the intake of water. Indeed, as the court of appeals observed, "Section 316(b) is something of an afterthought, having been added by the conference committee without substantive comment." *Id.* at 186 n.12. Thus, as the Second Circuit explained in *Riverkeeper I*, the "brevity" of Section 316(b), combined with the "paucity of legislative history, when measured against the volumes of drafts and speeches devoted to other aspects of the 1972 amendments," suggests that Congress "desire[d] to delegate significant rulemaking authority to the Agency." *Ibid.*

Moreover, what little legislative history there is supports EPA's interpretation. A legislator explained that "[t]he reference here to 'best technology available' is intended to be interpreted to mean the best technology available commercially *at an economically practicable cost.*" 118 Cong. Rec. 33,762 (1972) (statement of Rep. Clausen) (emphasis added). Even the court of appeals acknowledged that "practicable" connotes cost-benefit considerations. Pet. App. 30a-31a.

c. The court of appeals relied on what it believed to be a clear intent on the part of Congress to abolish cost-benefit analysis after 1989 because, in the court's view, EPA may not undertake such analysis in determining

either BAT or BADT, and BAT replaced BPT in 1989. Pet. App. 20a-23a. As discussed above, Congress set forth lists of factors that EPA "shall" consider in determining BAT and BADT. 33 U.S.C. 1314(b)(1)(B); 33 U.S.C. 1316(b)(1)(B); see pp. 19-21, *supra*. Without explanation, the court of appeals treated those lists as setting forth the only factors that EPA "could consider." Pet. App. 21a. That interpretation is contradicted by the statute itself with respect to BAT, because Section 304(b)(2)(B), after identifying certain specific factors that EPA "shall" take into account, also authorizes consideration of "such other factors as the Administrator deems appropriate." 33 U.S.C. 1314(b)(2)(B).

Assuming for the sake of argument that cost-benefit analysis is not one of the other factors that EPA may consider in determining BAT, however, the court of appeals' conclusion does not follow. Cf. *National Crushed Stone*, 449 U.S. at 71. Even if no Section 301 or 306 effluent limitations could be based in part on cost-benefit analysis after 1989, that would manifest only an intent to preclude cost-benefit analysis for *discharge* limitations under Sections 301 and 306; it would not unambiguously reflect an intent to preclude cost-benefit analysis for *intake* limitations under the different Section 316(b) standard.

Moreover, the court of appeals erred in assuming that all Section 301 effluent limitations after 1989 are BAT limitations. As discussed above, the BAT standard is inapplicable to conventional pollutants, which are generally governed instead by the BCT standard. 33 U.S.C. 1311(b)(2)(E). In determining BCT, EPA must consider "the reasonableness of the relationship between the costs of attaining a reduction in effluents and the effluent reduction benefits derived." 33 U.S.C. 1314(b)(4)(B).

If the incremental costs of more stringent technologies are not reasonable in light of their incremental benefits, EPA will set BCT effluent limitations at the BPT level. 51 Fed. Reg. 24,976 (1986). Thus, since 1989, EPA has continued to adopt BPT standards for some conventional pollutants. See *Chemical Mfrs. Ass'n* v. *United States EPA*, 870 F.2d 177, 206-207 (5th Cir.), decision clarified on reh'g by 885 F.2d 253 (1989), cert. denied, 495 U.S. 910 (1990). And Congress authorized EPA to set effluent limitations for certain non-conventional pollutants at a level less stringent than BAT but at least as stringent as BPT. 33 U.S.C. 1311(g). The court of appeals therefore erred in assuming that the BAT standard governs all Section 301 effluent limitations after 1989.

Nor is there any basis for the court of appeals' conclusion that the Act unambiguously requires EPA to treat BTA as being more equivalent to BAT and BADT than to BPT. The court of appeals stated that BTA is "linguistically similar" to BAT but not BPT. Pet. App. 23a. But BTA, BPT, and BAT all include the terms "best," "technology," and "available," and neither BPT nor BAT goes on to consider minimizing adverse environmental impacts, as BTA does. See 33 U.S.C. 1311(b)(1)(A) and (2)(A). The court of appeals suggested that the BPT standard is inapposite because the word "practicable" appears in BPT but not BTA. Pet. App. 31a. One could argue with equal force, however, that BAT is inapposite because the phrase "economically achievable" appears in BAT but not BTA. Accordingly, the court of appeals erred in concluding that the Act unambiguously treats BTA like BAT (but not BPT) for this purpose. The only sensible conclusion one can draw from the differences in jargon used by Congress is that all of the different "best" standards are indeed different

and susceptible to differing interpretations in their own right, such that none of the others controls the meaning of BTA.

The BADT standards promulgated under Section 306 provide a poor analogy for an additional reason: they govern only *new* sources, while Section 316(b) governs both new and existing sources. See 33 U.S.C. 1316(b)(1)(B). Congress generally imposes stricter requirements on new sources because it is generally more feasible and less expensive for technology to be installed in new sources when they are first being built than for existing facilities to be reconfigured to incorporate that technology. See, *e.g.*, *CPC Int'l, Inc.* v. *Train*, 540 F.2d 1329, 1341 (8th Cir. 1976), cert. denied, 430 U.S. 966 (1977); *American Iron & Steel Inst.* v. *EPA*, 526 F.2d 1027, 1058 (3d Cir. 1975), amended, 560 F.2d 589 (1977). The applicability of Section 316(b)'s BTA standard to both new and existing sources demonstrates not only that the BADT analogy is inapposite, but also that flexibility is needed in the application of the BTA standard. Section 316(b)'s broader coverage also provides another basis for Congress's decision to confer greater discretion on EPA to implement Section 316(b) than to implement the Section 301 and 306 standards.

C. The Court Of Appeals Usurped EPA's Discretion By Imposing Extra-Textual Constraints On EPA's Consideration Of Various Factors

Because Section 316(b) does not "directly [speak] to the precise question at issue," *Chevron*, 467 U.S. at 842, and Congress granted EPA broad rulemaking authority to administer the Act, see 33 U.S.C. 1361(a), EPA's reasonable interpretation of the ambiguous statutory text is entitled to deference, *Chevron*, 467 U.S. at 843.

EPA's authority includes "the formulation of policy and the making of rules to fill any gap left, implicitly or explicitly, by Congress." *Ibid.* (quoting *Morton* v. *Ruiz*, 415 U.S. 199, 231 (1974)).

EPA has long construed Section 316(b) to permit consideration of the relationship between costs and benefits. Cf. *Barnhart* v. *Walton*, 535 U.S. 212, 219-220 (2002). As early as 1977, EPA issued a permitting decision and a General Counsel opinion that explained that, while Section 316(b) does not require a formal cost-benefit analysis, it would *not* be "reasonable to interpret Section 316(b) as requiring use of technology whose cost is wholly disproportionate to the environmental benefit to be gained." *In re Pub. Serv. Co. of N.H. (Seabrook Station, Units 1 and 2)*, No. 76-7, 1977 WL 22370 (E.P.A. June 10, 1977), remanded on other grounds, 572 F.2d 872 (1st Cir. 1978); accord *In re Cent. Hudson Gas & Elec. Corp., Op. EPA Gen. Counsel*, NPDES No. 63, 1977 WL 28250, at *8 (E.P.A. July 29, 1977). Thus, the legal framework followed for more than 30 years has provided for EPA and state permitting authorities to consider the relationship between costs and benefits to at least that extent in making individual permitting decisions. See, *e.g.*, *In re Pub. Serv. Co. of N.H. (Seabrook Station, Units 1 and 2)*, No. 76-7, 1978 WL 21140 (E.P.A. Aug. 4, 1978) (finding that an alternative's costs would be wholly disproportionate to its benefits), aff'd, *Seacoast Anti-Pollution League* v. *Costle*, 597 F.2d 306, 311 (1st Cir. 1979) (upholding the agency's consideration of costs); C.A. App. 492 (EPA determination, as part of 1988 permitting decision, that closed-cycle cooling towers were not BTA for a facility because the costs would be "wholly disproportionate to the environmental benefit"); *id.* at 351 (EPA determination, as part of 1986 per-

mitting decision, that an alternative was not BTA because its costs were "wholly disproportionate to anticipated benefits"); J.A. 140 (describing "measures that have been required" by EPA when other technologies would have "wholly disproportionate" costs).

While the court of appeals recited deference principles, Pet. App. 16a-17a, the court sharply departed from those principles. The degree of that departure is underscored not only by the implausibility of the court's contention that Section 316(b) unambiguously precludes consideration of the relationship between costs and benefits, but also by the extent to which the court attempted to micro-manage EPA's decisionmaking by establishing rules that cannot be found anywhere in the Act. The court concluded, for example, that EPA may consider costs as part of "cost-effectiveness" but not "cost-benefit" analysis—terms that appear nowhere in Section 316(b). See *id.* at 24a, 26a. After consulting the definition of "cost-effectiveness" found in an OMB circular that does not purport to interpret Section 316(b), the court proclaimed that EPA could adopt a significantly cheaper technology that would save 99-101 fish instead of 100-103 fish. *Id.* at 22a-23a & n.10, 27a. While it is not clear what result the court of appeals would reach if five or ten additional fish were potentially affected instead of one or two, the point for present purposes is that the court of appeals' approach contravenes the principles of *Chevron* by usurping the agency's role of construing and filling in gaps in an ambiguous statute. As this Court has made clear, "a court may not substitute its own construction of a statutory provision for a reasonable interpretation made by the administrator of an agency." *Chevron*, 467 U.S. at 844.

Indeed, by permitting the agency to weigh costs against at least one or two fish, the court of appeals essentially permitted EPA to consider the relationship between costs and benefits, but only in the most extreme cases. Even on its own terms, therefore, the court of appeals' decision lacks a principled grounding in the statutory text, because nothing in the Act unambiguously permits such consideration but limits it in the manner the court of appeals imposed.

Moreover, the court of appeals agreed to let EPA consider other practical factors, such as energy efficiency and countervailing environmental effects. Pet. App. 26a-27a n.12. While those factors are important, the lines drawn by the court of appeals are by no means required by the Act. The statutory standard makes no more reference to a technology's energy efficiency than to the relationship between costs and benefits. Indeed, energy efficiency could be viewed as a cost issue, because a power plant's less efficient operation due to the use of new technology increases the cost of producing the same amount of energy. Yet the court of appeals permitted EPA to weigh energy efficiency but not costs against benefits.

The court of appeals also was of the view that BTA must be "technology-driven," and that a standard selected based in part on cost-effectiveness analysis (or energy efficiency) is technology-driven, while a standard based in part on cost-benefit analysis is not. Pet. App. 24a. There is no statutory basis for those distinctions. Once one recognizes (as the court of appeals did) that EPA has discretion to consider factors other than technology, the Act provides no basis for the court of appeals' picking and choosing among such factors, especially among factors that EPA is expressly required to

consider under one or more of the cross-referenced standards in Sections 301 and 306. That is especially true with respect to cost-benefit analysis. Section 316(b) does not require the use of technology for technology's sake. Instead, it expressly looks to benefits by requiring the best technology available for *minimizing adverse environmental impact. Id.* at 157a, 249a-250a. And, as discussed above, the BTA standard and all of the cross-referenced provisions in Sections 301 and 306 authorize consideration of costs. See pp. 15-21, *supra*. As long as EPA is considering both costs and benefits, nothing in the Act prohibits the agency from considering the relationship between the two.

D. There Is No Basis For Applying An Artificial Presumption Against Consideration Of The Relationship Between Costs And Benefits

The court of appeals turned normal rules of statutory construction and *Chevron* deference on their head by reasoning that, if Congress had intended to permit cost-benefit analysis, it would have clearly said so. See Pet. App. 25a. There is no logical or precedential basis for such a presumption against cost-benefit analysis. But even if there were, it would not apply in the context of this case, where Congress intended to confer broad authority on the agency and expressly cross-referenced sections that require cost-benefit analysis.

a. Congress's *silence* on whether an agency may consider the relationship between costs and benefits provides no basis for inferring an unambiguous legislative prohibition against such consideration. "[S]ilence, after all, normally creates ambiguity. It does not resolve it." *Barnhart*, 535 U.S. at 218. And in *Chevron*, this Court admonished that, "if a statute is silent * * *

with respect to the specific issue, the question for the Court is whether the agency's answer is based on a permissible construction of the statute." 467 U.S. at 843.

On unusual occasions, this Court has erected a plain statement rule in order to avoid constitutional difficulties, *e.g.*, *Gregory* v. *Ashcroft*, 501 U.S. 452, 460-461, 464 (1991), or because of the unlikelihood that Congress would have intended a result, *e.g.*, *Spector* v. *Norwegian Cruise Line Ltd.*, 545 U.S. 119, 131-132 (2005). But there is nothing inherently suspect about weighing costs and benefits. Numerous environmental and other statutes require or permit such analysis. See, *e.g.*, Matthew D. Adler & Eric A. Posner, *Rethinking Cost-Benefit Analysis*, 109 Yale L.J. 165, 167 (1999). And in everyday life, people routinely determine whether an item is worth its cost. See pp. 13-14, *supra*. Thus, "other things being equal, [the Court] should read silences or ambiguities in the language of regulatory statutes as permitting, not forbidding, this type of rational regulation." *Whitman* v. *American Trucking Ass'ns, Inc.*, 531 U.S. 457, 490 (2001) (Breyer, J., concurring in part and in the judgment).

The court of appeals erred in reading *American Textile Manufacturers Institute* v. *Donovan*, 452 U.S. 490, 510 (1981), as erecting a presumption against consideration of the relationship between costs and benefits. See Pet. App. 24a-25a. *Donovan* upheld the Occupational Safety and Health Administration's determination that it was not *required* to undertake cost-benefit analysis under a different statute. *Donovan*, 452 U.S. at 506, 541. Moreover, *Donovan* predated *Chevron*. Thus, while *Donovan* stated that, "[w]hen Congress has intended that an agency engage in cost-benefit analysis, it has clearly indicated such intent on the face of the stat-

ute," *id.* at 510-511, the *Donovan* Court did not have occasion to address the question whether silence unambiguously *precludes* consideration of costs and benefits. Indeed, the dissenting opinion in *Donovan* construed the Court's opinion as "suggest[ing] * * * that the Act *permits* the Secretary to undertake [a cost-benefit] analysis if he so chooses." *Id.* at 544 (Rehnquist, J., dissenting).

More recent court of appeals decisions applying *Chevron* principles of statutory construction have construed congressional silence as permitting cost-benefit analysis. See, *e.g.*, *Sierra Club* v. *United States EPA*, 314 F.3d 735, 744 (5th Cir. 2002); *Michigan* v. *United States EPA*, 213 F.3d 663, 678-679 (D.C. Cir. 2000) (citing cases), cert. denied, 532 U.S. 903, and 532 U.S. 904 (2001). The District of Columbia Circuit, for example, has explained that "[i]t is only where there is clear congressional intent to preclude consideration of cost that we find agencies barred from considering costs." *Michigan*, 213 F.3d at 678 (internal quotation marks and citation omitted). The court of appeals erred by relying on a contrary presumption.

Riverkeeper's reliance (Br. in Opp. 25-26) on *Whitman* is also misplaced. In that case, the Court agreed with EPA that the Clean Air Act (CAA), 42 U.S.C. 7401 *et seq.*, unambiguously precludes consideration of costs in setting National Ambient Air Quality Standards (NAAQS). 531 U.S. at 464-465. The Court stated that, because NAAQS are "the engine that drives" much of the CAA, EPA could consider costs only if Congress had provided a clear textual commitment of such authority to the agency. *Id.* at 467-468. The Court then agreed with EPA that the text of the CAA—which requires EPA to set NAAQS at levels "requisite to protect the

public health" with "an adequate margin of safety," 42 U.S.C. 7409(b)(1)—"unambiguously bars cost considerations from the NAAQS-setting process" when that provision is "interpreted in its statutory and historical context and with appreciation for its importance to the CAA as a whole." 531 U.S. at 471.

Whitman is inapposite for a number of reasons. While that case applied a presumption against *any consideration of costs* in setting NAAQS, the court of appeals here held that EPA *may* consider costs in determining BTA. See Pet. App. 26a. The question here is not (as it was in *Whitman*) whether EPA may consider costs at all in setting the relevant standards, but whether the agency's consideration of costs may take the form of cost-benefit analysis. A presumption against any consideration of costs provides little if any support for the court of appeals' decision permitting the agency to consider costs but greatly circumscribing its manner of doing so, which is presumably why the court of appeals itself did not rely on *Whitman*.

In addition, the *Whitman* Court repeatedly emphasized that its holding turned on the NAAQS' centrality to the CAA. See 531 U.S. at 468, 469 n.1, 471. Thus, the Court did not disapprove the District of Columbia Circuit's cases holding that EPA may generally consider costs in the absence of an express directive to the contrary. Instead, the *Whitman* Court emphasized that "[n]one of the sections of the CAA in which the District of Columbia Circuit has found authority for the EPA to consider costs shares [Section] 109(b)(1)'s prominence in the overall statutory scheme." *Id.* at 469 n.1 (citing, *e.g.*, *Michigan*, 213 F.3d at 678-679). As explained above, Section 316(b)'s single sentence concerning the *intake* of water is by no means the centerpiece of the CWA.

Rather, it is "something of an afterthought, having been added by the conference committee without substantive comment," *Riverkeeper I*, 358 F.3d at 186 n.12, that addresses a unique issue separate and apart from the CWA's normal focus on the *discharge* of pollutants into waters of the United States. See p. 23, *supra*. Thus, there is no basis for applying a presumption against weighing of costs and benefits in this case.

b. Even if some presumption applied here, it would be overcome by the statutory text, context, and legislative history discussed above. The text of Section 316(b)'s BTA standard, combined with its cross-reference to Sections 301 and 306, provides a strong textual basis for concluding that cost-benefit analysis is permissible. Moreover, the terseness of the relevant statutory text, coupled with the circumstances of its enactment, make clear that Congress intended to confer especially broad authority on EPA to address the unique problems associated with intake of water by cooling towers. See pp. 22-23, *supra*. Thus, as the Second Circuit observed in *Riverkeeper I*, "[t]o the extent [Section 316(b)] is silent on issues to which other sections speak, [a court should] hesitate to draw the negative inference that the brevity of section 316(b) reflects an intention to limit the EPA's authority rather than a desire to delegate significant rulemaking authority to the Agency." 358 F.3d at 186 n.12. That understates the matter because such "hesitat[ion]" is, of course, compelled by *Chevron*. See 467 U.S. at 842-843.

E. EPA's Consideration Of Costs And Benefits In The Rulemaking At Issue Here Fell Well Within Its Discretion

In the rulemaking here, EPA explained that "the relationship of costs to environmental benefits is an important" consideration, because "EPA has long recognized that there should be some reasonable relationship between the cost of cooling water intake structure control technology and the environmental benefits associated with its use." Pet. App. 253a. EPA also made clear, however, that the relationship between costs and benefits was not, by itself, determinative. Instead, selecting BTA "encompasses consideration of effectiveness, costs, non-water quality environmental impacts, feasibility issues and a host of other considerations." *Id.* at 219a.

EPA then considered costs along with other factors in selecting national BTA performance standards. See Pet. App. 255a-261a, 368a-369a. In addition, EPA authorized individual facilities to seek site-specific BTA determinations if, on a facility-specific basis, the costs of compliance with the national standard would be significantly greater than the benefits. 40 C.F.R. 125.94(a)(5)(ii). In each instance, EPA's consideration of costs and benefits was reasonable and fell comfortably within its statutory authority.

1. EPA based the national performance standards on its weighing of multiple relevant factors

a. EPA determined BTA after analyzing the various options' "overall efficacy, availability, economic practicability, including economic impact and the relationship of costs with benefits, and non-water quality environmental impacts, including energy impacts." Pet. App. 253a.

EPA ultimately selected a combination of technologies to reflect BTA for existing large power plants. *Id.* at 224a-229a. Based on those technologies, EPA then established national performance standards for reducing impingement mortality (by 80%-95%) and entrainment (by 60%-90%), but did not require the use of any specific technology to achieve those standards. See 40 C.F.R. 125.94(b); Pet. App. 226a-227a.

EPA rejected closed-cycle cooling technology as BTA "based on its generally high costs (due to conversions), the fact that other technologies approach the performance of this option, concerns for energy impacts due to retrofitting existing facilities, and other considerations." Pet App. 255a. EPA had selected closed-cycle cooling technology as BTA for *new* facilities in the Phase I rulemaking, but the agency determined that "retrofit[ting] existing systems is not the most cost-effective approach and at many existing facilities, retrofits may be impossible or not economically practicable." *Ibid.* The agency explained that the cost of closed-cycle recirculating cooling towers for Phase II facilities was many times higher than for Phase I facilities—at least $130-$200 million per tower, and probably more than that, with additional annual operating costs of up to $20 million per facility, compared to annual costs as low as $170,000 for new facilities. *Id.* at 255a-256a.

In addition to considering costs, EPA stressed that mandatory closed-cycle cooling technology would impose an "energy penalty" because existing fossil-fuel power plants that installed that technology would produce between 2.4% and 4% less electricity while consuming the same amount of coal. Construction of 20 additional plants could be required to make up for the lost produc-

tion, thereby increasing both financial costs and air pollution. Pet. App. 257a-258a.

Finally, EPA compared the effectiveness of closed-cycle cooling technology with the option that it ultimately selected, and determined that, "[a]lthough not identical, the ranges of impingement and entrainment reduction are similar under both options." Pet. App. 260a. After "consider[ing] this similarity in efficacy," along with the other factors noted above, EPA determined that "the total capital cost investment and associated economic impact is simply too high * * * for EPA to be able to justify selecting cooling towers" as BTA. *Id.* at 261a; see *id.* at 260a, 368a-369a.

b. EPA's decisionmaking is fully consistent with its authority to consider costs and benefits under Section 316(b). As explained above, Section 316(b) permits EPA to consider the relationship between costs and benefits. Moreover, the agency's analysis ultimately turned on the fact that its chosen option produces similar results to closed-cycle cooling technology at much lower cost and with less harm to the Nation's energy supply and air quality. See Pet. App. 260a-261a, 368a-369a.

Thus, the agency's analysis may be permissible even under the cramped standard fashioned by the court of appeals. The court of appeals held that EPA may undertake what the court referred to as "cost-effectiveness" analysis by "choos[ing] [a] cheaper technology" even if that technology is somewhat less effective than a significantly more costly technology. Pet. App. 27a. The court also acknowledged that EPA may consider "energy efficiency or environmental impact." *Id.* at 26a n.12. As discussed above, EPA undertook that type of analysis. While it is not clear whether the court of appeals would conclude that EPA had considered cost-effectiveness

only within a sufficiently "narrowly bounded range," *id.* at 28a, or whether the court of appeals would ultimately agree with EPA's balancing of the various other relevant factors, those matters fall well within EPA's discretion, not the court of appeals'. Cf. *id.* at 32a-37a (remanding for EPA to provide a further explanation of the basis for its decision).[2]

Indeed, *Riverkeeper I* strongly suggested as much. In the Phase I Rule, EPA rejected a technology, known as dry cooling, that "dramatically reduc[ed] impingement and entrainment" by "virtually eliminat[ing] the need for cooling water." *Riverkeeper I*, 358 F.3d at 194. EPA determined that, among other things, "dry cooling costs more than ten times as much per year as closed-cycle wet cooling, but it is estimated to reduce water intake by only an additional 5 percent relative to once-through cooling." *Id.* at 194 (footnotes omitted). EPA also considered a variety of other factors, including energy consumption and air emissions. *Id.* at 195. Recognizing that EPA's weighing of relevant factors falls within the agency's "considerable discretion," the court noted that it was "not well equipped * * * to meaningfully weigh a 95 percent reduction in entrainment against .027 percent of new generating capacity, 300 pounds of mercury, and $443 million dollars." *Id.* at 196.

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[2] The court of appeals' definition of the term "cost-effective" sows confusion because it differs from EPA's use of that term. The court defined cost-effectiveness to refer to the least expensive method of achieving a narrowly bounded level of benefit. See Pet. App. 23a, 28a. In the rulemaking below, however, EPA's cost-effectiveness analysis compared the *incremental* cost of a technology to its *incremental* benefits. Thus, while EPA explained that its decision was based in part on cost-effectiveness considerations, the agency also made clear that its cost-effectiveness analysis looked to the relationship between costs and benefits. See, *e.g.*, *id.* at 260a-261a.

In reviewing EPA's determination of BAT and BADT limitations under Sections 301 and 306, other courts of appeals have likewise observed that, because "Congress did not mandate any particular structure or weight for the many [relevant] factors," *Weyerhaeuser Co.* v. *Costle*, 590 F.2d 1011, 1045 (D.C. Cir. 1978), EPA has "considerable discretion in evaluating the relevant factors and determining the weight to be accorded to each." *Texas Oil & Gas Ass'n* v. *United States EPA*, 161 F.3d 923, 928 (5th Cir. 1998); see *NWF* v. *EPA*, 286 F.3d 554, 570 (D.C. Cir. 2002); *BP Exploration*, 66 F.3d at 796.[3]

2. EPA permissibly authorized site-specific determinations in circumstances where costs significantly exceed benefits

In addition to establishing nationwide performance standards, EPA authorized the operator of an individual facility to apply for a site-specific determination of BTA if the facility's costs of complying with the national performance standards "would be significantly greater than the benefits." 40 C.F.R. 125.94(a)(5)(ii). If the operator makes that showing with "reliable, scientifically valid" data, "[t]he [agency] must establish site-specific alternative requirements * * * that achieve an efficacy that, in the judgment of the [agency], is as close as practicable to the applicable performance standards * * * without resulting in costs that are significantly greater

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[3] The court of appeals upheld EPA's authority to express BTA as a range, but remanded EPA's chosen ranges based on its view that Section 316(b) requires "as much reduction of adverse environmental impacts as is technologically possible." Pet. App. 43a. Because that holding is based on the court's erroneous construction of the Act, it should be reversed as well.

than the benefits at [the] facility." *Ibid.*; see Pet. App. 222a-224a.[4]

That provision, which is consistent with the historic practice of determining BTA on a facility-specific, best-professional-judgment basis, recognizes that site-specific differences among facilities might warrant different results. The agency explained that its "comparison of national costs to national benefits may not be applicable to a specific site due to variations in (1) the performance of intake technologies and (2) characteristics of the waterbody in which the intake(s) are sited." Pet. App. 250a. "For example, there may be some facilities where the absolute numbers of fish and shellfish impinged and entrained is so minimal that the cost to achieve the required percentage reductions would be significantly greater than the benefits of achieving the required reductions at that particular site." *Ibid.*; see *id.* at 355a-356a.

The court of appeals invalidated that provision based on its view that cost-benefit analysis is impermissible. Pet. App. 56a-60a. As explained above, that was error. The court underscored its error by taking particular exception to EPA's determination that a cost-benefit variance might be appropriate if very few aquatic organisms were subject to impingement or entrainment in a particular waterbody, such that there would be little benefit in that waterbody from the use of more costly

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[4] EPA also authorized an application for a site-specific determination of BTA if a particular facility's compliance costs "would be significantly greater than the costs considered by the Administrator * * * in establishing the applicable performance standards." 40 C.F.R. 125.94(a)(5)(i). The court of appeals remanded that provision for procedural reasons that are distinct from the question presented here. Pet. App. 49a-56a.

technology. See *id.* at 58a-60a. The court determined that EPA may not consider water quality, and thus may not consider whether or to what extent a technology would have greater environmental benefits than a less expensive alternative. See *ibid.* As discussed above, however, Section 316(b) requires BTA for "minimizing adverse environmental impact," and thus makes the environmental benefit to be achieved an important consideration. See pp. 29-30, *supra*. Especially considering that EPA authorized a site-specific BTA only when the costs of complying with the nationwide performance standards would be "significantly greater" than the benefits, and that the agency nonetheless required a site-specific BTA to "achieve an efficacy that * * * is as close as practicable to the applicable performance standards" consistent with the significantly-greater test, 40 C.F.R. 125.94(a)(5)(ii), EPA did not exceed its broad discretion under Section 316(b).[5]

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[5] In the context of facility-specific BTA determinations, EPA's long-standing view has been that it would be unreasonable to select as BTA a technology whose costs are wholly disproportionate to its benefits. See pp. 27-28, *supra*. For purposes of the site-specific variance provision, EPA used a less stringent "significantly greater than" test in this rulemaking. 40 C.F.R. 125.94(a)(5)(ii). EPA's legal interpretations have been consistent because the agency has not taken the position that the "wholly disproportionate" standard is the *only* permissible way to consider the relationship between costs and benefits; instead, EPA has opined that it would be unreasonable to ignore a disproportionality of that degree. See p. 27, *supra*. In addition, permit writers considered the "wholly disproportionate" test in conjunction with other factors as part of an overall best-professional-judgment determination. Whether to permit a variance from the new nationwide performance standards presents a different question, and EPA has long stressed the need for flexibility in determining BTA for any particular facility. *E.g.*, Pet. App. 250a-251a; J.A. 42-45. The need for flexibility is particularly great for existing (Phase II) facilities, because owners of newer facilities have far

CONCLUSION

The judgment of the court of appeals should be reversed with respect to the performance standards and the site-specific cost-benefit provision and the case remanded.

Respectfully submitted.

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more flexibility in building new technology into the initial design. J.A. 309; 68 Fed. Reg. 13,541 (2003); 67 Fed. Reg. 17,145 (2002). In addition, EPA determined that the more flexible "significantly greater than" standard was needed in this context to avoid unwarranted energy impacts, because the Phase II rule affects approximately 55% of the Nation's electric-generating capacity. 68 Fed. Reg. at 13,541; 67 Fed. Reg. at 17,145-17,146; J.A. 309. In any event, the court of appeals' decision does not rest on the difference between the "wholly disproportionate" and "significantly greater than" standards; instead, the court erroneously insisted on its own, distinct "cost effectiveness" test. See Pet. App. 26a; cf. *id.* at 55a-56a n.25 (noting the court's "discomfort" with the "significantly greater than" test).

APPENDIX

1. 33 U.S.C. 1311 provides in pertinent part:

Effluent limitations

(a) Illegality of pollutant discharges except in compliance with law

Except as in compliance with this section and sections 1312, 1316, 1317, 1328, 1342, and 1344 of this title, the discharge of any pollutant by any person shall be unlawful.

(b) Timetable for achievement of objectives

In order to carry out the objective of this chapter there shall be achieved—

(1)(A) not later than July 1, 1977, effluent limitations for point sources, other than publicly owned treatment works, (i) which shall require the application of the best practicable control technology currently available as defined by the Administrator pursuant to section 1314(b) of this title, or (ii) in the case of a discharge into a publicly owned treatment works which meets the requirements of subparagraph (B) of this paragraph, which shall require compliance with any applicable pretreatment requirements and any requirements under section 1317 of this title; and

(B) for publicly owned treatment works in existence on July 1, 1977, or approved pursuant to section 1283 of this title prior to June 30, 1974 (for which construction must be completed within four years of approval), effluent limitations based upon secondary treatment as defined by the Administrator pursuant to section 1314(d)(1) of this title; or,

(C) not later than July 1, 1977, any more stringent limitation, including those necessary to meet water quality standards, treatment standards, or schedules of compliance, established pursuant to any State law or regulations (under authority preserved by section 1370 of this title) or any other Federal law or regulation, or required to implement any applicable water quality standard established pursuant to this chapter.

(2)(A) for pollutants identified in subparagraphs (C), (D), and (F) of this paragraph, effluent limitations for categories and classes of point sources, other than publicly owned treatment works, which (i) shall require application of the best available technology economically achievable for such category or class, which will result in reasonable further progress toward the national goal of eliminating the discharge of all pollutants, as determined in accordance with regulations issued by the Administrator pursuant to section 1314(b)(2) of this title, which such effluent limitations shall require the elimination of discharges of all pollutants if the Administrator finds, on the basis of information available to him (including information developed pursuant to section 1325 of this title), that such elimination is technologically and economically achievable for a category or class of point sources as determined in accordance with regulations issued by the Administrator pursuant to section 1314(b)(2) of this title, or (ii) in the case of the introduction of a pollutant into a publicly owned treatment works which meets the requirements of subparagraph (B) of this paragraph, shall require compliance with any applicable pretreatment re-

quirements and any other requirement under section 1317 of this title;

(B) Repealed. Pub. L. 97-117, § 21(b), Dec. 29, 1981, 95 Stat. 1632.

(C) with respect to all toxic pollutants referred to in table 1 of Committee Print Numbered 95-30 of the Committee on Public Works and Transportation of the House of Representatives compliance with effluent limitations in accordance with subparagraph (A) of this paragraph as expeditiously as practicable but in no case later than three years after the date such limitations are promulgated under section 1314(b) of this title, and in no case later than March 31, 1989;

(D) for all toxic pollutants listed under paragraph (1) of subsection (a) of section 1317 of this title which are not referred to in subparagraph (C) of this paragraph compliance with effluent limitations in accordance with subparagraph (A) of this paragraph as expeditiously as practicable, but in no case later than three years after the date such limitations are promulgated under section 1314(b) of this title, and in no case later than March 31, 1989;

(E) as expeditiously as practicable but in no case later than three years after the date such limitations are promulgated under section 1314(b) of this title, and in no case later than March 31, 1989, compliance with effluent limitations for categories and classes of point sources, other than publicly owned treatment works, which in the case of pollutants identified pursuant to section 1314(a)(4) of this title shall require application of the best conventional pollutant control

technology as determined in accordance with regulations issued by the Administrator pursuant to section 1314(b)(4) of this title; and

(F) for all pollutants (other than those subject to subparagraphs (C), (D), or (E) of this paragraph) compliance with effluent limitations in accordance with subparagraph (A) of this paragraph as expeditiously as practicable but in no case later than 3 years after the date such limitations are established, and in no case later than March 31, 1989.

(3)(A) for effluent limitations under paragraph (1)(A)(i) of this subsection promulgated after January 1, 1982, and requiring a level of control substantially greater or based on fundamentally different control technology than under permits for an industrial category issued before such date, compliance as expeditiously as practicable but in no case later than three years after the date such limitations are promulgated under section 1314(b) of this title, and in no case later than March 31, 1989; and

(B) for any effluent limitation in accordance with paragraph (1)(A)(i), (2)(A)(i), or (2)(E) of this subsection established only on the basis of section 1342(a)(1) of this title in a permit issued after February 4, 1987, compliance as expeditiously as practicable but in no case later than three years after the date such limitations are established, and in no case later than March 31, 1989.

(c) Modification of timetable

The Administrator may modify the requirements of subsection (b)(2)(A) of this section with respect to any

point source for which a permit application is filed after July 1, 1977, upon a showing by the owner or operator of such point source satisfactory to the Administrator that such modified requirements (1) will represent the maximum use of technology within the economic capability of the owner or operator; and (2) will result in reasonable further progress toward the elimination of the discharge of pollutants.

(d) Review and revision of effluent limitations

Any effluent limitation required by paragraph (2) of subsection (b) of this section shall be reviewed at least every five years and, if appropriate, revised pursuant to the procedure established under such paragraph.

(e) All point discharge source application of effluent limitations

Effluent limitations established pursuant to this section or section 1312 of this title shall be applied to all point sources of discharge of pollutants in accordance with the provisions of this chapter.

(f) Illegality of discharge of radiological, chemical, or biological warfare agents, high-level radioactive waste, or medical waste

Notwithstanding any other provisions of this chapter it shall be unlawful to discharge any radiological, chemical, or biological warfare agent, any high-level radioactive waste, or any medical waste, into the navigable waters.

(g) Modifications for certain nonconventional pollutants

(1) General authority

The Administrator, with the concurrence of the State, may modify the requirements of subsection (b)(2)(A) of this section with respect to the discharge from any point source of ammonia, chlorine, color, iron, and total phenols (4AAP) (when determined by the Administrator to be a pollutant covered by subsection (b)(2)(F) of this section) and any other pollutant which the Administrator lists under paragraph (4) of this subsection.

(2) Requirements for granting modifications

A modification under this subsection shall be granted only upon a showing by the owner or operator of a point source satisfactory to the Administrator that—

(A) such modified requirements will result at a minimum in compliance with the requirements of subsection (b)(1)(A) or (C) of this section, whichever is applicable;

(B) such modified requirements will not result in any additional requirements on any other point or nonpoint source; and

(C) such modification will not interfere with the attainment or maintenance of that water quality which shall assure protection of public water supplies, and the protection and propagation of a balanced population of shellfish, fish, and wildlife, and allow recreational activities, in and on the water and such modification will not

result in the discharge of pollutants in quantities which may reasonably be anticipated to pose an unacceptable risk to human health or the environment because of bioaccumulation, persistency in the environment, acute toxicity, chronic toxicity (including carcinogenicity, mutagenicity or teratogenicity), or synergistic propensities.

(3) Limitation on authority to apply for subsection (c) modification

If an owner or operator of a point source applies for a modification under this subsection with respect to the discharge of any pollutant, such owner or operator shall be eligible to apply for modification under subsection (c) of this section with respect to such pollutant only during the same time period as he is eligible to apply for a modification under this subsection.

(4) Procedures for listing additional pollutants

(A) General authority

Upon petition of any person, the Administrator may add any pollutant to the list of pollutants for which modification under this section is authorized (except for pollutants identified pursuant to section 1314(a)(4) of this title, toxic pollutants subject to section 1317(a) of this title, and the thermal component of discharges) in accordance with the provisions of this paragraph.

(B) Requirements for listing

(i) Sufficient information

The person petitioning for listing of an additional pollutant under this subsection shall submit to the Administrator sufficient information to make the determinations required by this subparagraph.

(ii) Toxic criteria determination

The Administrator shall determine whether or not the pollutant meets the criteria for listing as a toxic pollutant under section 1317(a) of this title.

(iii) Listing as toxic pollutant

If the Administrator determines that the pollutant meets the criteria for listing as a toxic pollutant under section 1317(a) of this title, the Administrator shall list the pollutant as a toxic pollutant under section 1317(a) of this title.

(iv) Nonconventional criteria determination

If the Administrator determines that the pollutant does not meet the criteria for listing as a toxic pollutant under such section and determines that adequate test methods and sufficient data are available to make the determinations required by paragraph (2) of this subsection with respect to the pollutant, the Administrator shall add the pollutant to the list of pollutants specified in paragraph (1) of this subsection for which modifications are authorized under this subsection.

(C) Requirements for filing of petitions

A petition for listing of a pollutant under this paragraph—

(i) must be filed not later than 270 days after the date of promulgation of an applicable effluent guideline under Section 1314 of this title;

(ii) may be filed before promulgation of such guideline; and

(iii) may be filed with an application for a modification under paragraph (1) with respect to the discharge of such pollutant.

(D) Deadline for approval of petition

A decision to add a pollutant to the list of pollutants for which modifications under this subsection are authorized must be made within 270 days after the date of promulgation of an applicable effluent guideline under section 1314 of this title.

(E) Burden of proof

The burden of proof for making the determinations under subparagraph (B) shall be on the petitioner.

(5) Removal of pollutants

The Administrator may remove any pollutant from the list of pollutants for which modifications are authorized under this subsection if the Administrator determines that adequate test methods and sufficient data are no longer available for determining whether

or not modifications may be granted with respect to such pollutant under paragraph (2) of this subsection.

* * * * *

2. 33 U.S.C. 1314 provides in pertinent part:

Information and guidelines

(a) Criteria development and publication

* * * * *

(4) The Administrator shall, within 90 days after December 27, 1977, and from time to time thereafter, publish and revise as appropriate information identifying conventional pollutants, including but not limited to, pollutants classified as biological oxygen demanding, suspended solids, fecal coliform, and pH. The thermal component of any discharge shall not be identified as a conventional pollutant under this paragraph.

* * * * *

(b) Effluent limitation guidelines

For the purpose of adopting or revising effluent limitations under this chapter the Administrator shall, after consultation with appropriate Federal and State agencies and other interested persons, publish within one year of October 18, 1972, regulations, providing guidelines for effluent limitations, and, at least annually thereafter, revise, if appropriate, such regulations. Such regulations shall—

(1)(A) identify, in terms of amounts of constituents and chemical, physical, and biological characteristics of pollutants, the degree of effluent reduction attainable through the application of the best practicable control technology currently available

for classes and categories of point sources (other than publicly owned treatment works); and

(B) specify factors to be taken into account in determining the control measures and practices to be applicable to point sources (other than publicly owned treatment works) within such categories or classes. Factors relating to the assessment of best practicable control technology currently available to comply with subsection (b)(1) of section 1311 of this title shall include consideration of the total cost of application of technology in relation to the effluent reduction benefits to be achieved from such application, and shall also take into account the age of equipment and facilities involved, the process employed, the engineering aspects of the application of various types of control techniques, process changes, non-water quality environmental impact (including energy requirements), and such other factors as the Administrator deems appropriate;

(2)(A) identify, in terms of amounts of constituents and chemical, physical, and biological characteristics of pollutants, the degree of effluent reduction attainable through the application of the best control measures and practices achievable including treatment techniques, process and procedure innovations, operating methods, and other alternatives for classes and categories of point sources (other than publicly owned treatment works); and

(B) specify factors to be taken into account in determining the best measures and practices available to comply with subsection (b)(2) of section 1311 of this title to be applicable to any point source

(other than publicly owned treatment works) within such categories or classes. Factors relating to the assessment of best available technology shall take into account the age of equipment and facilities involved, the process employed, the engineering aspects of the application of various types of control techniques, process changes, the cost of achieving such effluent reduction, non-water quality environmental impact (including energy requirements), and such other factors as the Administrator deems appropriate;

(3) identify control measures and practices available to eliminate the discharge of pollutants from categories and classes of point sources, taking into account the cost of achieving such elimination of the discharge of pollutants; and

(4)(A) identify, in terms of amounts of constituents and chemical, physical, and biological characteristics of pollutants, the degree of effluent reduction attainable through the application of the best conventional pollutant control technology (including measures and practices) for classes and categories of point sources (other than publicly owned treatment works); and

(B) specify factors to be taken into account in determining the best conventional pollutant control technology measures and practices to comply with section 1311(b)(2)(E) of this title to be applicable to any point source (other than publicly owned treatment works) within such categories or classes. Factors relating to the assessment of best conventional pollutant control technology (including measures

and practices) shall include consideration of the reasonableness of the relationship between the costs of attaining a reduction in effluents and the effluent reduction benefits derived, and the comparison of the cost and level of reduction of such pollutants from the discharge from publicly owned treatment works to the cost and level of reduction of such pollutants from a class or category of industrial sources, and shall take into account the age of equipment and facilities involved, the process employed, the engineering aspects of the application of various types of control techniques, process changes, non-water quality environmental impact (including energy requirements), and such other factors as the Administrator deems appropriate.

3. 33 U.S.C. 1316 provides:

National standards of performance

(a) Definitions

For purposes of this section:

(1) The term "standard of performance" means a standard for the control of the discharge of pollutants which reflect the greatest degree of effluent reduction which the Administrator determines to be achievable through application of the best available demonstrated control technology, processes, operating methods, or other alternatives, including, where practicable, a standard permitting no discharge of pollutants.

(2) The term "new source" means any source, the construction of which is commenced after the publication of proposed regulations prescribing a standard of performance under this section which will be applicable to such

source, if such standard is thereafter promulgated in accordance with this section.

* * * * *

(b) Categories of sources; Federal standards of performance for new sources

(1)(A) The Administrator shall, within ninety days after October 18, 1972, publish (and from time to time thereafter shall revise) a list of categories of sources, which shall, at the minimum, include:

pulp and paper mills;

paperboard, builders paper and board mills;

meat product and rendering processing;

dairy product processing;

grain mills;

canned and preserved fruits and vegetables processing;

canned and preserved seafood processing;

sugar processing;

textile mills;

cement manufacturing;

feedlots;

electroplating;

organic chemicals manufacturing;

inorganic chemicals manufacturing;

plastic and synthetic materials manufacturing;

soap and detergent manufacturing;

fertilizer manufacturing;

petroleum refining;

iron and steel manufacturing;

nonferrous metals manufacturing;

phosphate manufacturing;

steam electric powerplants;

ferroalloy manufacturing;

leather tanning and finishing;

glass and asbestos manufacturing;

rubber processing; and

timber products processing.

(B) As soon as practicable, but in no case more than one year, after a category of sources is included in a list under subparagraph (A) of this paragraph, the Administrator shall propose and publish regulations establishing Federal standards of performance for new sources within such category. The Administrator shall afford interested persons an opportunity for written comment on such proposed regulations. After considering such comments, he shall promulgate, within one hundred and twenty days after publication of such proposed regulations, such standards with such adjustments as he deems appropriate. The Administrator shall, from time to time, as technology and alternatives change, revise such standards following the procedure required by this subsection for promulgation of such standards. Standards of performance, or revisions thereof, shall become effective upon promulgation. In establishing or revising Federal standards of performance for new sources under this section, the Administrator shall take into con-

sideration the cost of achieving such effluent reduction, and any non-water quality, environmental impact and energy requirements.

(2) The Administrator may distinguish among classes, types, and sizes within categories of new sources for the purpose of establishing such standards and shall consider the type of process employed (including whether batch or continuous).

(3) The provisions of this section shall apply to any new source owned or operated by the United States.

* * * * *

4. 33 U.S.C. 1326 provides:

Thermal discharges

(a) Effluent limitations that will assure protection and propagation of balanced, indigenous population of shellfish, fish, and wildlife

With respect to any point source otherwise subject to the provisions of section 1311 of this title or section 1316 of this title, whenever the owner or operator of any such source, after opportunity for public hearing, can demonstrate to the satisfaction of the Administrator (or, if appropriate, the State) that any effluent limitation proposed for the control of the thermal component of any discharge from such source will require effluent limitations more stringent than necessary to assure the projection and propagation of a balanced, indigenous population of shellfish, fish, and wildlife in and on the body of water into which the discharge is to be made, the Administrator (or, if appropriate, the State) may impose an effluent limitation under such sections for such plant, with respect to the thermal component of such discharge

(taking into account the interaction of such thermal component with other pollutants), that will assure the protection and propagation of a balanced, indigenous population of shellfish, fish, and wildlife in and on that body of water.

(b) Cooling water intake structures

Any standard established pursuant to section 1311 of this title or section 1316 of this title and applicable to a point source shall require that the location, design, construction, and capacity of cooling water intake structures reflect the best technology available for minimizing adverse environmental impact.

(c) Period of protection from more stringent effluent limitations following discharge point source modification commenced after October 18, 1972

Notwithstanding any other provision of this chapter, any point source of a discharge having a thermal component, the modification of which point source is commenced after October 18, 1972, and which, as modified, meets effluent limitations established under section 1311 of this title or, if more stringent, effluent limitations established under section 1313 of this title and which effluent limitations will assure protection and propagation of a balanced, indigenous population of shellfish, fish, and wildlife in or on the water into which the discharge is made, shall not be subject to any more stringent effluent limitation with respect to the thermal component of its discharge during a ten year period beginning on the date of completion of such modification or during the period of depreciation or amortization of such facility for the purpose of section 167 or 169 (or both) of title 26, whichever period ends first.

5. 33 U.S.C. 1362 provides in pertinent part:

Definitions

Except as otherwise specifically provided, when used in this chapter:

* * * * *

(13) The term "toxic pollutant" means those pollutants, or combinations of pollutants, including disease-causing agents, which after discharge and upon exposure, ingestion, inhalation or assimilation into any organism, either directly from the environment or indirectly by ingestion through food chains, will, on the basis of information available to the Administrator, cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions (including malfunctions in reproduction) or physical deformations, in such organisms or their offspring.

6. 40 C.F.R. 125.83 provides in pertinent part:

What special definitions apply to this subpart?

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Minimize means to reduce to the smallest amount, extent, or degree reasonably possible.

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7. 40 C.F.R. 125.94 provides in pertinent part:

How will requirements reflecting best technology available for minimizing adverse environmental impact be established for my Phase II existing facility?

(a) *Compliance alternatives.* You must select and implement one of the following five alternatives for establishing best technology available for minimizing adverse environmental impact at your facility:

(1)(i) You may demonstrate to the Director that you have reduced, or will reduce, your flow commensurate with a closed-cycle recirculating system. In this case, you are deemed to have met the applicable performance standards and will *not* be required to demonstrate further that your facility meets the impingement mortality and entrainment performance standards specified in paragraph (b) of this section. In addition, you are not subject to the requirements in §§ 125.95, 125.96, 125.97, or 125.98. However, you may still be subject to any more stringent requirements established under paragraph (e) of this section; or

(ii) You may demonstrate to the Director that you have reduced, or will reduce, your maximum through-screen design intake velocity to 0.5 ft/s or less. In this case, you are deemed to have met the impingement mortality performance standards and will not be required to demonstrate further that your facility meets the performance standards for impingement mortality specified in paragraph (b) of this section and you are not subject to the requirements in §§ 125.95, 125.96, 125.97, or 125.98 as they apply to impingement mortality. However, you are still subject to any applicable requirements for entrainment reduction and may still be subject to any

more stringent requirements established under paragraph (e) of this section.

(2) You may demonstrate to the Director that your existing design and construction technologies, operational measures, and/or restoration measures meet the performance standards specified in paragraph (b) of this section and/or the restoration requirements in paragraph (c) of this section.

(3) You may demonstrate to the Director that you have selected, and will install and properly operate and maintain, design and construction technologies, operational measures, and/or restoration measures that will, in combination with any existing design and construction technologies, operational measures, and/or restoration measures, meet the performance standards specified in paragraph (b) of this section and/or the restoration requirements in paragraph (c) of this section;

(4) You may demonstrate to the Director that you have installed, or will install, and properly operate and maintain an approved design and construction technology in accordance with § 125.99(a) or (b); or

(5) You may demonstrate to the Director that you have selected, installed, and are properly operating and maintaining, or will install and properly operate and maintain design and construction technologies, operational measures, and/or restoration measures that the Director has determined to be the best technology available to minimize adverse environmental impact for your facility in accordance with paragraphs (a)(5)(i) or (ii) of this section.

(i) If the Director determines that data specific to your facility demonstrate that the costs of compliance

under alternatives in paragraphs (a)(2) through (4) of this section would be significantly greater than the costs considered by the Administrator for a facility like yours in establishing the applicable performance standards in paragraph (b) of this section, the Director must make a site-specific determination of the best technology available for minimizing adverse environmental impact. This determination must be based on reliable, scientifically valid cost and performance data submitted by you and any other information that the Director deems appropriate. The Director must establish site-specific alternative requirements based on new and/or existing design and construction technologies, operational measures, and/or restoration measures that achieve an efficacy that is, in the judgment of the Director, as close as practicable to the applicable performance standards in paragraph (b) of this section, without resulting in costs that are significantly greater than the costs considered by the Administrator for a facility like yours in establishing the applicable performance standards. The Director's site-specific determination may conclude that design and construction technologies, operational measures, and/or restoration measures in addition to those already in place are not justified because of the significantly greater costs. To calculate the costs considered by the Administrator for a facility like yours in establishing the applicable performance standards you must:

(A) Determine which technology the Administrator modeled as the most appropriate compliance technology for your facility;

(B) Using the Administrator's costing equations, calculate the annualized capital and net operation and

maintenance (O & M) costs for a facility with your design intake flow using this technology;

(C) Determine the annualized net revenue loss associated with net construction downtime that the Administrator modeled for your facility to install this technology;

(D) Determine the annualized pilot study costs that the Administrator modeled for your facility to test and optimize this technology;

(E) Sum the cost items in paragraphs (a)(5)(i)(B), (C), and (D) of this section; and

(F) Determine if the performance standards that form the basis of these estimates (*i.e.*, impingement mortality reduction only or impingement mortality and entrainment reduction) are applicable to your facility, and if necessary, adjust the estimates to correspond to the applicable performance standards.

(ii) If the Director determines that data specific to your facility demonstrate that the costs of compliance under alternatives in paragraphs (a)(2) through (4) of this section would be significantly greater than the benefits of complying with the applicable performance standards at your facility, the Director must make a site-specific determination of best technology available for minimizing adverse environmental impact. This determination must be based on reliable, scientifically valid cost and performance data submitted by you and any other information the Director deems appropriate. The Director must establish site-specific alternative requirements based on new and/or existing design and construction technologies, operational measures, and/or restoration measures that achieve an efficacy that, in the

judgment of the Director, is as close as practicable to the applicable performance standards in paragraph (b) of this section without resulting in costs that are significantly greater than the benefits at your facility. The Director's site-specific determination may conclude that design and construction technologies, operational measures, and/or restoration measures in addition to those already in place are not justified because the costs would be significantly greater than the benefits at your facility.

(b) *National performance standards.*—

(1) *Impingement mortality performance standards.* If you choose compliance alternatives in paragraphs (a)(2), (a)(3), or (a)(4) of this section, you must reduce impingement mortality for all life stages of fish and shellfish by 80 to 95 percent from the calculation baseline.

(2) *Entrainment performance standards.* If you choose compliance alternatives in paragraphs (a)(1)(ii), (a)(2), (a)(3), or (a)(4) of this section, you must also reduce entrainment of all life stages of fish and shellfish by 60 to 90 percent from the calculation baseline if:

(i) Your facility has a capacity utilization rate of 15 percent or greater, and

(ii)(A) Your facility uses cooling water withdrawn from a tidal river, estuary, ocean, or one of the Great Lakes; or

(B) Your facility uses cooling water withdrawn from a freshwater river or stream and the design intake flow of your cooling water intake structures is greater than five percent of the mean annual flow.

(3) *Additional performance standards for facilities withdrawing from a lake (other than one of the Great Lakes) or a reservoir.* If your facility withdraws cooling water from a lake (other than one of the Great Lakes) or a reservoir and you propose to increase the design intake flow of cooling water intake structures it uses, your increased design intake flow must not disrupt the natural thermal stratification or turnover pattern (where present) of the source water, except in cases where the disruption does not adversely affect the management of fisheries. In determining whether any such disruption does not adversely affect the management of fisheries, you must consult with Federal, State, or Tribal fish and wildlife management agencies).

(4) *Use of performance standards for site-specific determinations of best technology available.* The performance standards in paragraphs (b)(1) through (3) of this section must also be used for determining eligibility for site-specific determinations of best technology available for minimizing adverse environmental impact and establishing site specific requirements that achieve an efficacy as close as practicable to the applicable performance standards without resulting in costs that are significantly greater than those considered by the Administrator for a facility like yours in establishing the performance standards or costs that are significantly greater than the benefits at your facility, pursuant to § 125.94(a)(5).

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